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Miscellaneous notes bearing on the capture of one of the young by a garter snake, the stereotyped method of approach to the nest used by the parents, notes as to the behavior of the nestlings, and a summary, conclude the paper.

The nest and nestlings being under continual observation for 144 hours and 53 minutes established an enviable record. If there are other ornithologists seeking for something difficult to do and something much worth while, let them go and do likewise.

Students of animal behavior will be interested in the suggested modifiability of behavior brought about by artificial conditions. Laboratory methods for the study of animal behavior are greatly emphasized at the present time. Such a paper as this, however, makes us ask the question whether first-hand information gained as this was is not vastly superior and more dependable than similar information which could have been gained by laboratory experiments. The artificial conditions which surround laboratory experiments on higher vertebrates, even though proper controls be used, usually make the results less dependable. The field method has the added advantage also of a comparatively small equipment.

The limited amount of available information regarding the life-histories of our song birds becomes apparent only to those who attempt to search into the subject. To those who appreciate the dearth of material such papers as the one before us give encouragement and bring hopes that their advent but presages increased activity in this field.—H. C. BRYANT.

LIFE ZONES AND CROP ZONES OF NEW MEXICO. By VERNON BAILEY. (North American Fauna No. 35, Sept. 5, 1913, pp. 1-100, pls. I-XVI, 6 figs. in text).

A great deal of valuable information is concentrated in the small compass of this publication, which is a brief but comprehensive survey of the subject. The life zones found in New Mexico are Lower Sonoran, Upper Sonoran, Transition, Canadian, Hudsonian, and Arctic-Alpine. Each is treated separately, first with a general account of the nature of the country covered, this followed by nominal lists of the mammals, birds, reptiles, and plants peculiar to the division, and similar lists of the fruits, vegetables and other crops most apt to thrive. Following this classification of the life zones is a series of descriptions of the more important mountain ranges of the state.

The ornithological matter contained in the publication is limited to nominal lists of the breeding birds of each zone, and similar lists of the species occurring in the various mountain ranges. Transients and winter visitants

are not included, as having no bearing upon the subject of the report. We understand, however, that the animals of the state are to receive more detailed attention in future papers, which they certainly deserve, as pertaining to a portion of North America which hitherto has not received its fair share of attention from naturalists.

More explicit statements of the manner of occurrence of certain species may be expected to explain what at present appear to be some rather puzzling discrepancies in the status of the same birds in New Mexico and at points farther west. Thus the Scott Oriole (*Icterus parisorum*) is here listed as Lower Sonoran, while in the experience of the present reviewer it is in Arizona and California most emphatically Upper Sonoran. Similarly the Cooper Tanager (*Piranga rubra cooperi*), given as Upper Sonoran, is in Arizona a characteristic bird of the Lower Sonoran wooded river beds, while the White-rumped Shrike (*Lanius l. excubitorides*), also here considered as Upper Sonoran, is in Arizona and California at least as abundant in the Lower Sonoran valleys. There are other similar cases.

The doubtful inclusion of the Calliope Hummingbird (*Stellula calliope*) among the breeding birds of the Canadian Zone of New Mexico is probably another instance of the extension of a hummingbird's breeding range from the appearance of migrating individuals, usually adult males, at distant points before the breeding season is fairly over.

On the whole, however, these lists of the birds, as well as those of the other components of the fauna and flora of the state, the carefully worked out results of extensive and painstaking field work by an admitted authority on the subject, may be taken as practically final. The above comments by the reviewer on certain species are directed not as criticisms of statements made, but rather to call attention to the various conditions under which species have been found in different portions of their habitats.

The numerous plates and figures are well selected to illustrate the nature of the country, while the accompanying colored map of the life zones of the state, of unusually large size, is apparently most carefully worked out as regards the finer details.—H. S. SWARTH.

BIRD STUDY NOTE BOOK. By CLARA COZAD KEEZEL. (Published by the author, Garnett, Kansas).

This title appears on the cover of a little note book carefully prepared to meet the needs of the growing number of students interested in bird life. It is arranged in columns appropriately headed for entering the name of the bird, date of arrival, residence (winter,

summer, or permanent), conspicuous colors or markings, principal food, kind and location of nest. There then follows a larger space in which to enter any notes of special interest in regard to habits, song, nesting, economic value, etc., of the bird observed. The first page of the book contains a brief preface stating its aim and giving a short bibliography on birds of particular value in school work, while the last page contains pertinent suggestions for bird study in schools.

By adhering to these few most important topics, the author has been able to produce a book which is concise and simple, yet of sufficient size to hold at least two years' records, so that interesting and useful comparisons may be made.

The Bird Study Note Book is the outcome of several years' experience on the part of the author, and we are glad to learn that it has been successfully used in one of the Kansas schools for the past four years. We believe, with the author, that the school room is, perhaps, the most important place to disseminate knowledge of the value of bird life, and to arouse interest for the protection necessary to preserve our native birds.

Although this note book is particularly adapted and prepared for the use of pupils of intermediate and grammar grades, it is well worthy of recommendation to any bird student who realizes the value of keeping actual records from day to day.—MARGARET W. WYTHE.

THE BIRDS OF VIRGINIA | by | HAROLD H. BAILEY | [vignette] | with fourteen full page colored plates, | one map, and one hundred and eight | half-tones taken from nature | treating one hundred and eighty-five species and subspecies: | all the birds that breed within the state. | 1913 [our copy received September 1] | J. P. Bell Company, Inc. | Publishers | Lynchburg, Va. | 8vo, pages xxiii + 362; illustrations as above.

Our fellow Cooper Club member, and former Californian, Harold H. Bailey, has "done us proud" in putting out one of the most attractive bird books of the year. The above transcript of the title gives a good idea of the nature of the work as regards illustrations. The text deals in a concise way with those birds which have been found nesting within the borders of Virginia.

Naturally, as being an enthusiastic oologist of the old school, Bailey's chief effort is to present his readers with important facts in regard to the nesting habits and eggs of the birds dealt with. Still, there is much useful information of a more general nature, especially as regards economic status, all of which is selected with a view to securing popular interest in bird study in a state in which field

naturalists are apparently few in number.

Of course the reviewer is able to find points to criticize. Has there ever appeared a bird book entirely above *someone's* criticism? The most serious fault to be found with the book in our minds concerns not its ornithology, but its grammar — which, frankly, is in places atrocious! This fault could have been obviated by recourse to editorial supervision, and it is to be hoped that this will be attended to in future editions.

One other possible criticism is the inclusion of photographs of western subspecies or even species (as the burrowing owls on page 138), with nothing to indicate to the uninitiated that they are not from Virginian subjects.

This western tang is more pleasingly evidenced on page 86, where is presented the reproduction of a photograph by W. Otto Emerson showing a typical collector's camp, with that now long lamented ornithologist, Walter E. Bryant, in characteristic attitude. Many of us "middle-aged" bird people share with Mr. Bailey the fondest of recollections of the days when we gained knowledge and inspiration from W. E. Bryant.

As to the facts set forth in the work under review, Harold H. Bailey is absolute authority in his field. And it is needless to say that no well conducted library of ornithology will long remain without a copy of his "Birds of Virginia".—J. GRINNELL.

CATALOGUE OF A COLLECTION OF BOOKS ON ORNITHOLOGY IN THE LIBRARY OF JOHN E. THAYER; compiled by Evelyn Thayer and Virginia Keyes (Boston, privately printed, 1913; 8vo, 188 pages. Copy received September 8).

Approximately 1200 titles appear in this catalog, this large number suggesting the probability that Mr. Thayer's is the most complete private ornithological library in America today. *Auduboniana* are excellently represented; and there are many other fine things, such as Wilson's *Aves Hawaiiensis*, the almost complete works of Gould, etc., etc.

Bibliographically the Thayer Catalogue is not above criticism. There is lack of uniformity in treatment, and not a few errors are in evidence. In a number of cases the titles of separates are entered as if they were individual works, without indication of their true connection. However, the Catalogue is evidently not at all intended as a technical exposition of its subject.

There is a growing present-day tendency towards the adoption of book-collecting as a mind recreation on the part of men of means who have also a scientific trend of thought. In some cases the attention of the collector is absorbed wholly by books as objects of ac-